3M

Ensure™ Virtual Security Thread

Combats license plate counterfeiting

while protecting public safety and revenue.

Throw another roadblock in front of the bad guys.

The news media are full of stories about crimes and terrorist acts committed with the aid of fake license plates.

Criminals and terrorists often use motor vehicles in the planning and commission of robberies, murders, bombings and other acts of violence. Counterfeit plates are preferred because stolen plates are usually reported to authorities. Sophisticated criminals will find a vehicle of the same make, model, year and color as the one they plan to use and make a counterfeit plate with the same number. Police checking the plate against a motor vehicle database will find what appears to be a legitimate plate number matching that vehicle.

They'll find their counterfeiting schemes hanging by a thread.

These days, it's relatively easy for sophisticated criminals to create counterfeit license plates that are virtually indistinguishable from legitimate plates. Even common criminals with far fewer resources are capable of producing counterfeits.

No matter what the motive – from avoiding vehicle registration fees to circumventing extra fees levied on drivers coming into congested cities to bigger plots – the integrity of license plates is essential.

The Liverpool Daily Post & Echo Ltd
October 10, 2003, Friday
MOTORING: CAUGHT OUT BY THE CAR CLONE CROOKS

Cloning is where one car's identity is switched to another vehicle. A car thief who has stolen, for example, a silver Ford Focus, will scour car parks for a similar model and then have fake license plates made up with that car's number. Fitted to the stolen car, it then takes on a clean identity which would pass a basic check by the authorities.

Montreal Gazette
April 3, 2002 Wednesday

Gagne testified at the murder trial of Hells Angels leader Maurice Boucher that his new skills came in handy to make a fake license plate out of copper for the getaway vehicle used in the 1997 killing of guard Pierre Rondeau.

Los Angeles Times
November 28, 2001 Wednesday Home Edition

Israel had pulled troops out of Jenin only hours before the gunmen entered the center of Afula in a car with fake Israeli license plates.

India Today, July 2, 2001

The discovery of a plot to bomb the US Embassy in Delhi reveals the very long reach of the world's most wanted man, Osama bin Laden. His role in the plot was to provide the cars to be used in the bombings and equip them with fake license plates and engine numbers.

Always one step ahead.

3M scientists have developed another exciting security feature that makes it much more difficult to create a convincing counterfeit license plate.
New 3M Ensure™ Virtual Security Thread (VST) joins the 3M Ensure™ Emblem for license plates and registration stickers on the front lines of vehicle identification for increased security around the globe.

You'll know one when you see one

The 3M Ensure virtual security thread for license plates is easy for authorities to see, yet difficult for criminals to simulate. The virtual security thread runs vertically through standard North American vehicle registration plates and horizontally through Euro-style plates for security and anti-counterfeiting purposes.

The security thread consists of two sinusoidal waves. One wave appears to float above while the second wave floats below the warranty marks within the retroreflective material of the license plate.

Like the security thread now used in some currencies, the Ensure virtual security thread is an indelible mark, providing a uniquely strong deterrent to counterfeiting.

Visible day and night from inside or outside a police vehicle.

Officers in the field can see the thread and verify the authenticity of a plate made with Ensure™ virtual security thread from safely inside or outside of their police vehicles.

It is clearly visible without special training or equipment – in both daylight and retroreflected light at night. And it doesn't interfere or conflict with the license plate design. The durable design of Ensure imaging products will last for the life of the license plate.

International advantage for security and registration revenue

3M™ Ensure™ images in 3M™ Retroreflective Sheeting were introduced in the early 1980s as a means of verifying the authenticity of license plates and registration stickers. The patented 3M Ensure image is an economical, advanced security system.

Now required in the specifications for license plates and registration stickers by many states and countries, Ensure images can help protect valuable vehicle registration revenue sources for municipalities, states and other jurisdictions. Now Ensure VST three-dimensional images make plates even more difficult to counterfeit and easier to verify – protecting the safety of citizens and police officers.

Customers comment

Customers comparing license plates made with Ensure virtual security thread and other security features say that the Ensure VST design:

- "Is easy to see. It would be more difficult to counterfeit."
- "Has the best anti-counterfeit measures. It would be the hardest to duplicate."
- "Stood out immediately; I liked the floating threads."
- "Changes when viewed from different angles…therefore the most difficult to duplicate."

Source: 3M market research report, March 2003

You know it's from 3M

Nothing quite compares to the combination of a powerful deterrent and the 3M advantage. As a security measure, the Ensure imaging system offers unique benefits. Because the Ensure images are embedded in 3M reflective sheeting, additional advantages include:

- **Visibility & Safety.** In night viewing situations, 3M reflective materials are up to 200 times brighter than non-reflective materials. License plates made from 3M reflective sheeting are clearly visible to law enforcement personnel as they check vehicle registration day or night. And the clear visibility helps prevent nighttime collisions with parked vehicles.

- **Durability.** 3M guarantees that plates made with our materials will maintain their visibility, legibility and color for at least five years. The Ensure™ emblem with a unique identification symbol and lot number is your assurance of 3M quality and performance.

License plates with the 3M Ensure seal and Ensure VST combine a security image that is unique to each state or country with an easy to verify three dimensional thread pattern.

For more information contact your 3M representative or call: 1-800-553-1380

3M Ensure Seal

3M Ensure VST

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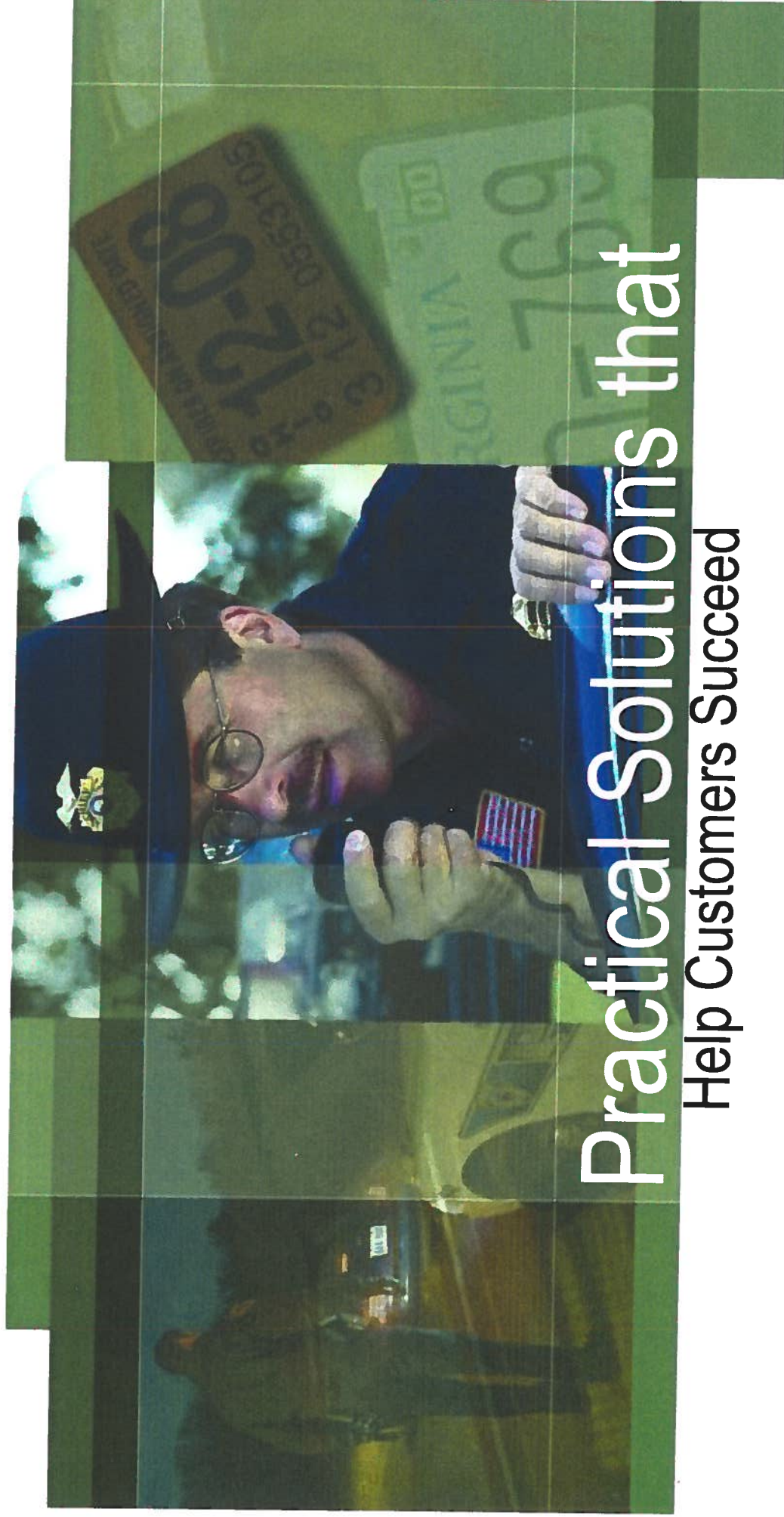Col. Santa Fe, Del. Alvaro Obregon
Mexico, D.F. 01210

3M Vehicle Registrations Systems

License Plate Reissues and Digital Printing

State of Michigan 2013
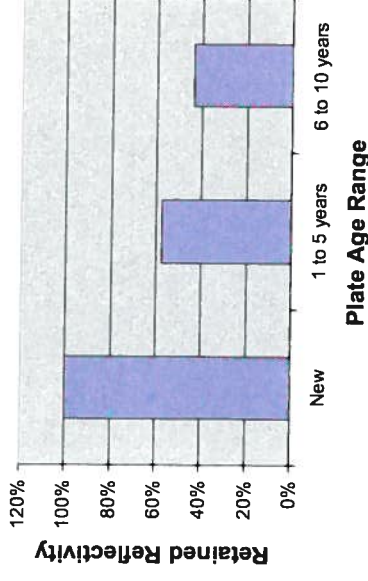
Practical Solutions that
Help Customers Succeed

Purposes of a License Plate

- Safety
- Law Enforcement
- Motor Vehicle Revenue Collection
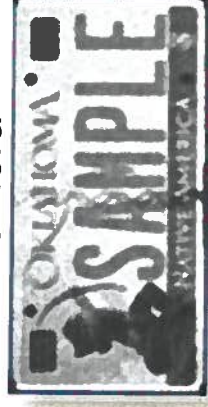- State Image

Reissue Objectives

- **Enhance safety**

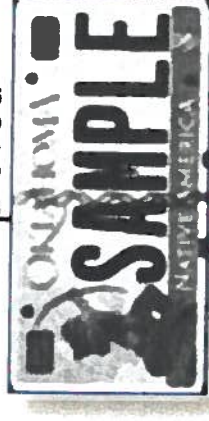- **Improve visual and camera readability for Law Enforcement**

  Visual — Camera — Improved

- **Recapture non-compliant vehicles**

  - *Improve registrations*

Law Enforcement - *Support from Police Chiefs*

The International Association of Chiefs of Police (IACP) resolved in 2002 to support license plate reissues

...WHEREAS, reissuance of license plates serves as a deterrent to those who would avoid registration and payment of motor vehicles fees; now, therefore, be it

RESOLVED, that the ...IACP, recognizing that the efficient and reliable identification of vehicles is a critical element of national and state security procedures, supports the issuance of fully-reflective, license plates with clearly identifiable registration numbers and state of registration, and urges that states periodically issue new plates to maintain effective vehicle identification and to protect the security and integrity of the vehicle registration process.

Reissues encourage compliance and help with security

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Policy Positions of American Association of Motor Vehicles Administrators (AAMVA)

*"License plates can be issued for multi-year periods and **should be reissued on a regular basis to insure that the information** they display remains legible."*

American Association of
Motor Vehicle Administrators

AAMVA

Failure Modes after Warranty Period

- Mechanical Damage
- Roll Coat Adhesion Loss
- Fading
- Brightness Loss
- Bubbbling
- Corrosion
- Sheeting Delamination
- Metal Fatigue

Example of Fading

SOS: Hear a cop's pleas about license plates and driver's licenses

By Rich Kinsey AnnArbor.com Community Contributor
Posted on: Thu., Jun 21, 2012 5:59am

"My son's vehicle still sports a 1996 issued 100th Anniversary of the Automobile plate. It, like the early **"Great Lakes Splendor"** license plates, have fallen victim to Great Lakes State road salt and look like they have been Great Lakes sand blasted. **At night, these plates, which are up to 16 years old, are so oxidized they are barely readable.**

Did you know that if your plate is unreadable due to oxidation, dirt, grime, snow, or license plate frame, you are in violation of the law? This would be termed an "obscured plate" violation. If your plate is old, oxidized and unreadable, take it to the SOS office and get it replaced.

Have you tried to read a license plate by following a vehicle, like the police have to in order to radio in their traffic stop? Is it my old eyes or are license plates hard to read? In order to read the now seven-digit plates, you have to be locked on the other vehicle's bumper. "

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Improve Visibility & Safety at Night

- 25 cpl
- new plate

- 5 cpl
- 7 year old plate

250 Feet

Reissue/Replacement History

*Updated Feb 2011 (Anoop Gupta)

Map labels (states/regions):

- 7R
- 1950
- 7R
- 5R
- 1992
- 2009,8
- 2006,5
- No history
- 2001
- 7R
- 2001
- 10R (removed 2008)
- 2005,6
- 1996
- 2004 (started but not completed)
- 1969
- 1980s
- No history
- 2007
- 2000
- 2008,5
- 1999
- 2008
- 2011,5
- 2009
- 1996
- 2007,5
- 2006,6
- No history
- No history
- 20% every year or at end of 7 yrs.
- No history
- History
- 2008,5
- 2009,5
- 2008,6
- 1997
- 10R
- No history
- 1996
- No history

Arrows / small states:

- 2000
- 1999
- No history
- 1986
- 2001
- 1996
- 2001
- 2000, 10
- (removed 2009)
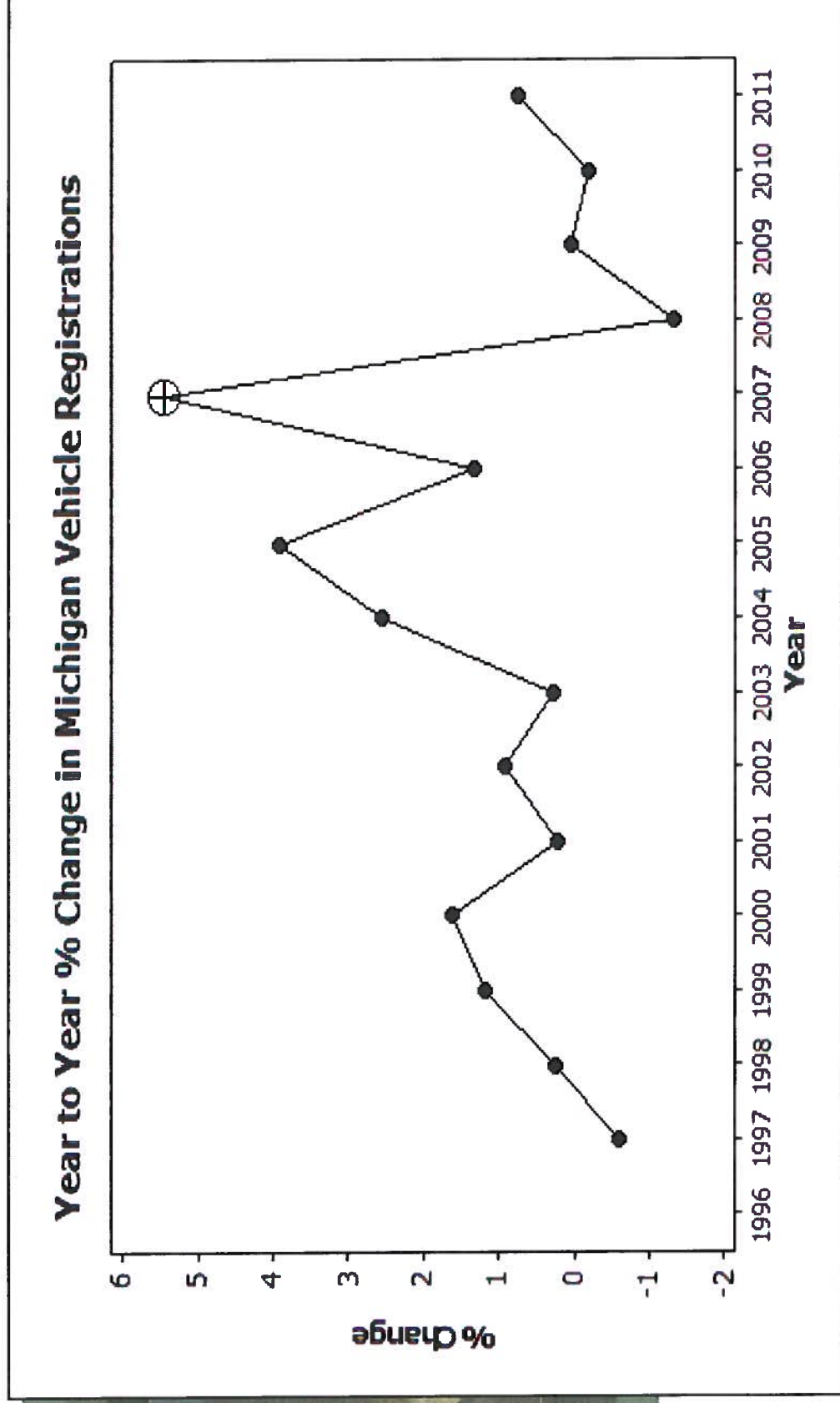- 1959
- 1997
- 1985
- 1999 (DC)

Statutory Reissues:

Rolling - WA, ID, TX, MN, FL, MT

Set Period – WY, SD, NE, KS, MS, AL, TN, SC, KY, IN

*Where possible, Year of last reissue, reissue period and if it is rolling (R)included (is statutory)

2007 Michigan Reissue

Year to Year % Change in Michigan Vehicle Registrations

Potential Non-Compliance Recapture Revenue

Reissue Period	8 year
Recapture Revenue	$43.2 million

Assumptions:

- 7 million vehicles involved in rolling reissue
- $131 average registration fees/vehicle
- 95% recapture rate of non-compliant vehicles

Rationale for Non-compliance rates and revenue recapture:

Non-compliance rates without a reissue typically range from 3-10% depending on time frame between reissues (previous studies). Assume 4% non-compliance, utilizing MI SOS 2010/11 Transaction History report

Digital License Plate Printing (DLP)

The flexible automated system lets you print plates on demand and print bar codes on plates to augment logistics functions:

1. Reduces inventory

2. Decreases Mailing costs

3. Decreases Aluminum costs

4. Uses less energy consumption and clean up

5. Added specialty plate revenue for improved design capabilities

6. Faster personalized and non-sequential plate production

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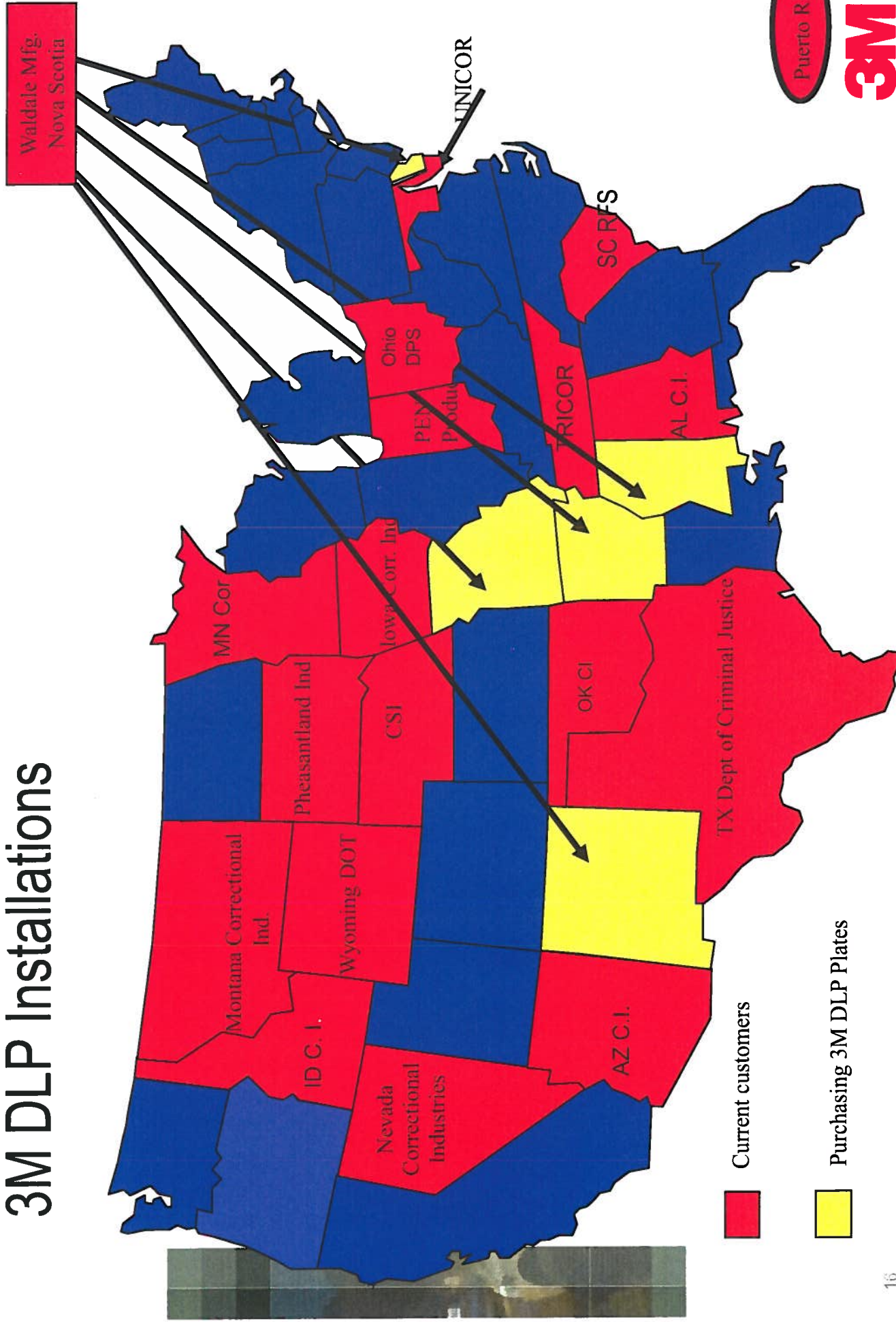
Current vs. DLP

Eliminate Roll Coating and Oven Curing

Digital Thermal Transfer Printing
250 sq. ft.
<$500 / Yr. Electric Cost

Roll-Coat & Oven Dry
6,000 to 10,000 sq. ft.
>$25,000 / Yr. Gas Cost

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3M DLP Installations

Legend:
- Current customers (red)
- Purchasing 3M DLP Plates (yellow)

Labels on map: Waldale Mfg. Nova Scotia, UNICOR, SC RES, Ohio DPS, PEN Produ..., TRICOR, AL.C.I., MN Cor, Iowa Corr. Ind, OK CI, TX Dept of Criminal Justice, Pheasantland Ind, CSI, Montana Correctional Ind., Wyoming DOT, I.D.C. I., Nevada Correctional Industries, AZ C.I., Puerto Rico
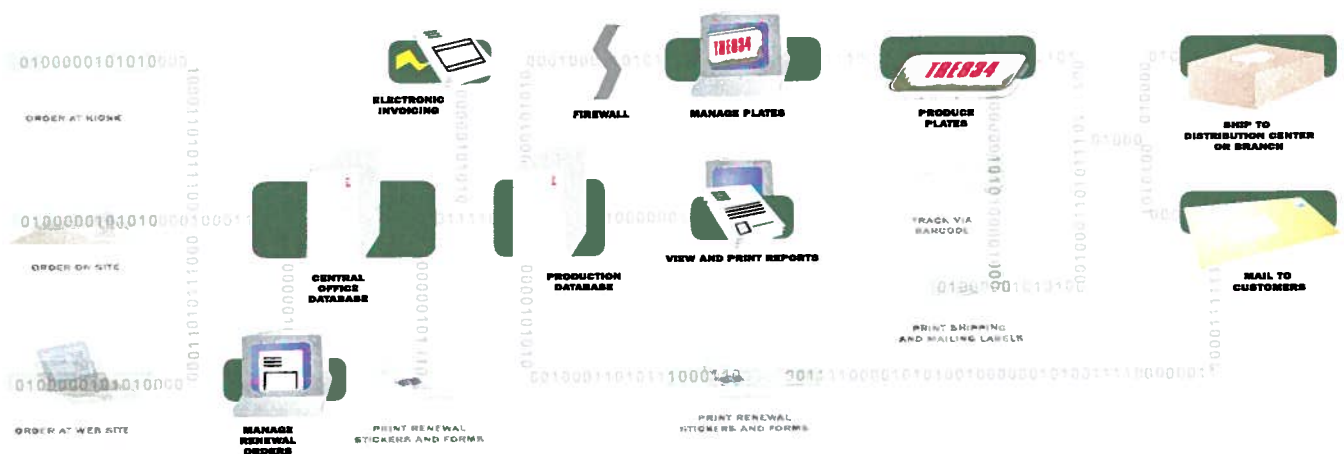
Digital License Plate System

reduce the cost of issuing plates and improve customer service

3M Vehicle Registration Solutions

The 3M™ Digital License Plate (DLP) System uses digitized information to drive the production of vehicle license plates to meet growing demands for service and delivery. Components of the DLP System include:

ORDER AT KIOSK

ORDER ON SITE

ELECTRONIC INVOICING

FIREWALL

MANAGE PLATES

PRODUCE PLATES

SHIP TO DISTRIBUTION CENTER OR BRANCH

CENTRAL OFFICE DATABASE

PRODUCTION DATABASE

VIEW AND PRINT REPORTS

TRACK VIA BARCODE

MAIL TO CUSTOMERS

ORDER AT WEB SITE

MANAGE RENEWAL ORDERS

PRINT RENEWAL STICKERS AND FORMS

PRINT RENEWAL STICKERS AND FORMS

PRINT SHIPPING AND MAILING LABELS

PC's, kiosks and software allow motorists and office representatives to enter registration and renewal orders via your Web site or other ordering interfaces.

A production database and information management software are integrated with your central office database.

Firewalls and other security measures meet your specific security needs.

Production control software allows you to process plates and print bar-coded labels for boxes, pallets and shipments.

The plate making station allows you to design plate graphics. The reporting software lets you track and analyze production, while electronic invoicing reduces paperwork and speeds payment.

Electronically entered plates can be printed and mailed the same day.

Quality components mean quality plates.

When you partner with 3M, you get
a proven process for transitioning
to a digital operation.

3M™ Scotchlite™ Reflective Sheeting DLP
Series 9250 is available in white for specialty
plate production or preprinted graphic format for
economical printing of large volume plate types
requiring only one ribbon to print variable
information.

3M™ Thermal Transfer Ribbon Series 1300 are
available in process colors and a variety of spot
colors. Custom colors are also available.

3M™ Clear Protective Film Series 9097
contains an adhesive layer that is laminated to
the printed sheeting. It provides a tough,
weather-resistant outer layer that protects
sheeting and graphics in the demanding exterior
vehicle environment.

3M™ DLP matched component print heads
transfer color from the ribbons to the sheeting.
Up to four heads are used per printer. The heads
contain 300 individually-addressable elements
per inch. The average print head life is 80,000
plates.
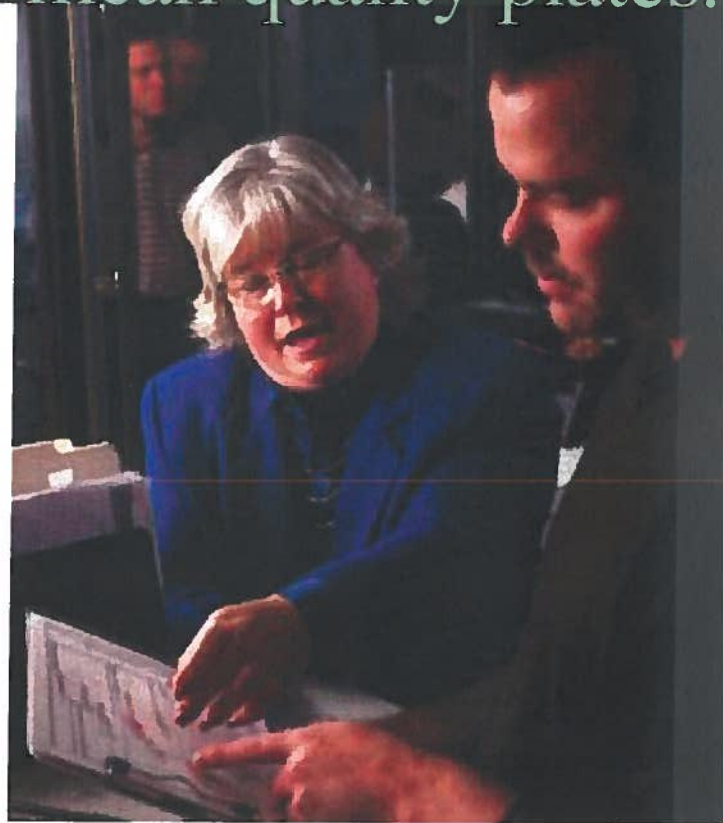
Translated into real-world solutions

Added Revenue

Increase revenue from specialty plate sales by creating more attractive designs. In Minnesota sales of the "Critical Habitat" plates soared when the new digitally printed loon design was issued. The DMV collected an extra $18 for every special plate that was issued. This added revenue can help alleviate budget cutbacks. In most states an additional $20 to $30 per year goes to the organization that sponsors the plate.

3M's service is unsurpassed

As with all its products, 3M stands behind its Digital License Plate System. In addition to complete system installation and personnel training, 3M provides top-notch technical service with trained specialists ready to assist in any situation. The 3M DLP system carries a complete parts and service warranty, and plates produced on the system are guaranteed for a minimum of five years.

If you're ready for dramatic results today—and want more possibilities for tomorrow—contact us at 1-800-553-1380 or tcm@mmm.com.